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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,391	09/15/2004	Chi-Cheng Ju	MTKP0083USA	5390

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EXAMINER
AN, SHAWN S

ART UNIT	PAPER NUMBER
2621	

NOTIFICATION DATE	DELIVERY MODE
07/08/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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	Application No.	Applicant(s)
Office Action Summary	10/711,391	JU, CHI-CHENG
	Examiner	Art Unit	
	SHAWN AN	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 May 2008*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 5-12* is/are rejected.

7)☒ Claim(s) *4* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 September 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date *9/15/04*.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____ .

DETAILED ACTION

Response to Applicant's election to restriction requirement

1.   Applicant's election of claims 1-12 of Group I without traverse as filed on 5/12/08 has been acknowledged. Furthermore, non-elected claims 13-20 have been canceled by the Applicant.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3.   Claims 1-3, 5-6, and 8-12 are rejected under 35 U.S.C. 102(a) as being anticipated by Applicant's admitted prior/related art.

Regarding claim 1, Applicant's admitted prior/related art discloses a video decoding method for predicting a current block of a picture comprising:

storing at least one previous product in a memory, wherein the previous product corresponds to a block of a plurality of blocks of the picture, and the previous product is the product of a quantized AC coefficient and a quantization scale of the block that the previous product corresponds to (Fig. 4, 411);

determining which block to use as a prediction block from the plurality of blocks (Fig. 3, 32);

reading from the memory at least one previous product corresponding to the prediction block (34); and

calculating at least one quantized AC coefficient of the current block using the at least one previous product read from the memory (36).

Regarding claim 2, Applicant's admitted prior/related art discloses each quantized AC coefficient being a discrete cosine transform coefficient corresponding to a quantization operation (Fig. 1, 143-144 to 146).

Regarding claim 3, Applicant's admitted prior/related art discloses the at least one previous product being generated during an inverse quantization operation (144) of the block to which the previous product corresponds (QF[v][u]).

Regarding claim 5, Applicant's admitted prior/related art discloses when the block determined to be used as the prediction block is outside a boundary of either a video object plane or a video packet corresponding to the picture, the method directly resets a prediction term of the quantized AC coefficient of the current block as zero to calculate the quantized AC coefficient of the current block rather than reading the at least one previous product of the prediction block from the memory (33).

Regarding claim 6, Applicant's admitted prior/related art discloses the prediction block being a left adjacent block or an upper adjacent block of the current block [0007].

Regarding claim 8, Applicant's admitted prior/related art discloses each quantized AC coefficient being the quantized AC coefficient QF[v][u] corresponding to the indexes [v,u], and the quantization scale is the quantization scale QP (Fig. 4).

Regarding claim 9, Applicant's admitted prior/related art discloses when the prediction block is a left adjacent block (A) of the current block, the at least one previous product read is a product MP.sub.A[V]=QF.sub.A[v][0]*QP.sub.A corresponding to the left adjacent block, wherein QF.sub.A[v][0] is a first column quantized AC coefficient of the left adjacent block (A) and QP.sub.A is a quantization scale of the left adjacent block (A); and when the prediction block is a upper adjacent block (C) of the current block, the at least one previous product read is a product MP.sub.C[u]=QF.sub.C[0][u]*QP.sub.C corresponding to the upper adjacent block, wherein QF.sub.C[0][u] is a first row quantized AC coefficient of the upper adjacent block (C) and QP.sub.C is a quantization scale of the upper adjacent block (C)(Fig. 4, see QPx; [0006-0008]).

Regarding claim 10, Applicant's admitted prior/related art discloses when the prediction block is a left adjacent block of the current block, the quantized AC coefficient QF.sub.X[v][0] of the current block (X) equals to PQF.sub.X[v][0]+MP.sub.-A[V]//QP.sub.X, {wherein MP.sub.- A[V] = QFA (v)(0)}, wherein QF.sub.X[v][0] is a first column quantized AC coefficient of the current block (X); when the prediction block is an upper adjacent block (C) of the current block, the quantized AC coefficient

QF.sub.X[0][u] of the current block (X) equals to

PQF.sub.X[0][u]+MP.sub.C[u]//QP.sub.X, {wherein MP.sub.- C[U] = QFc (0)(u)},

wherein QF.sub.X[0][u] is a first row quantized AC coefficient of the current block (X);

and the quantization scale QP.sub.X is a quantization scale of the current block,

PQF.sub.X[v][0] and PQF.sub.X[0][u] are inverse scan calculation results generated

during a previous stage decoding process of the current block, and the operator //

denotes a division operation with the result thereof rounded to the nearest integer (Fig.

3, 36; [0006-0008]).

    Regarding claims 11-12, Applicant's admitted prior/related art discloses the

calculating step further comprises:

    calculating at least one first column quantized AC coefficient QF.sub.X[v][0] or at

least one first row quantized AC coefficient QF.sub.X[0][u] of the current block using the

at least one previous product MP.sub.A[v] or MP.sub.C[u] read [Fig. 3, 36; 0006-0008];

and

    performing a saturation operation of the quantized AC coefficient QF [v][u], so the

quantized AC coefficient of the current block can be saturated in a predetermined

numerical interval (38)

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Applicant's admitted prior/related art.

    Regarding claim 7, Applicant's admitted prior/related art discloses the prediction

block being a left adjacent block of the current block [0007], and the memory (411)

being a part of a pipeline-based circuit (410).

Furthermore, a register being used as a memory is well known in the art.

Therefore, it would have been considered obvious for the memory to be a register of the pipeline-based circuit just as long as the end result is substantially the same.

Allowable Subject Matter

6.　　　Claim 4 is objected to as being dependent upon rejected base claim 1, but would be allowable:

if claim 4 is rewritten in independent form including all of the limitations of the base claim 1 and any intervening claims.

Dependent claim 4 recites novel features comprising:

each quantized AC coefficient is the quantized AC coefficient $QF[v][u]$ corresponding to the indexes $[v, u]$, the quantization scale is the quantization scale QP, and the method further comprises: transforming the quantized AC coefficient $QF[v][u]$ into a second order intermediate coefficient $F''[v][u]$ during the inverse quantization operation using one of the following operation equations: (a). a first quantization method: 8 $F''[v][u] = \{0$, if $QF[v][u] = 0$ ((2 .times. $MP[v][u]$ + k .times. QP) .times. $W[w][v][u]$) / 16 , if $QF[v][u]$ 0 wherein k = { 0 , intra block Sign ($QF[v][u]$) , non - intra block wherein the index w of the weighted matrix $W[w][v][u]$ is equal to 0 or 1, the values corresponding to an intra coded block and a non-intra coded block respectively, and the function Sign(x) is defined as follows: 9 Sign (x) = { 1 , x >= 0 - 1 , x < 0 ; or (b). a second quantization method: 10 $F''[v][u] = \{0$, if $QF[v][u] = 0$ (2 .times. $MP[v][u]$ + QP) , if $QF[v][u]$ 0 and QP is odd (2 .times. $MP[v][u]$ + QP) - 1 , if $QF[v][u]$ 0 and QP is even $F''[v][u]$ = Sign ($QF[v][u]$) .times. $F''[v][u]$ wherein the product $MP[v][u]=QF[v][u]*QP$, the at least one previous product is a sub set of the products $MP[v][u]$ with the indexes [v, u] varied, and the function Sign(x) is defined as follows: 11 Sign (x) = { 1 , x >= 0 - 1 , x < 0.

The prior art of record fails to anticipate or make obvious the novel features.

Accordingly, if the amendments are made to the claims listed above, and if rejected claims are canceled, the application would be placed in condition for allowance.

Conclusion

7.   The prior art made of record is considered pertinent to Applicant's disclosure.

      A.   Chen (6,385,242 B1), Apparatus/method for inverse quantization of MPEG-4 video.

8.   Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Shawn An whose telephone number is 571-272-7324.

9.   The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

10.   Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SHAWN AN/

Primary Examiner, Art Unit 2621

7/01/08